

*On the Formation of the Calcareous Corpuscles in Holothuria.*

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In studying the calcareous corpuscles in the Dendrochirotae, of which a considerable number of species are found at Banyuls and at Roseoff, I have been led to discover their mode of formation; and, though these elements present in each species a form so peculiar that it serves as a criterion in their determination, I have found that the original form of the corpuscle is everywhere the same in these animals.

A calcareous corpuscle has, in fact, as the basis of its formation, a group of hexagonal prismatic cells, arranged in a single layer, in a pavement-like form.

Four adjacent cells, and in the first place their walls of contact, serve as a centre of attraction for the calcareous molecules. Thus, at first, we get a corpuscle in the form of an X. The calcareous matter afterwards reaches the other lateral walls of these four cells; but the bases of the latter always remain free from any deposit. The centre of each cell is occupied by the nucleus, and the presence of this, preventing the calcareous deposit from spreading, explains the existence of holes in their structures. The calcareous deposit being more abundant along the edges of the hexagonal cells is the cause of the existence of the projections which occur on the surface of the corpuscles.

I shall call these four cells the *four fundamental cells of the corpuscle*, and give the name of the *fundamental calcareous corpuscle* to that which originates by the calcification of the lateral walls of these four cells. As a type of this *fundamental corpuscle* may be cited the normal corpuscle of *Colochirus Lacazei*.

Because the mode of formation is subjected to the same law, it does not follow that the fundamental calcareous corpuscle is identical in all species. The size, relative or absolute, of the hexagonal cells, the form and dimensions of the projections from the surface of the corpuscle are, in fact, matters which are fixed for each species, but vary in different species.

When once a fundamental calcareous corpuscle is formed, a calcification analogous to that above described gains the neighbouring hexagonal cells one after the other. According to the species this calcification either equally affects all the cells which surround this corpuscle, or only some of them. Thus we get corpuscles representing sometimes discs, sometimes laminæ, and more or less elongated and contorted.

In general, among the holes in the more complex calcareous corpuscles, we may distinguish four, which, by their size and their lozenge-shaped arrangement, strike one at once. They are precisely those of the fundamental calcareous corpuscle.

To sum up, in the Dendrochirotae:—(1) The calcareous corpuscles have as their basis of formation a plane of hexagonal cells; (2) only four adjacent cells are concerned in the commencement of the formation of every corpuscle, and thus furnish the *fundamental calcareous corpuscle*; (3) the apertures in the corpuscles are caused by the presence of the nuclei of the hexagonal cells; (4) the projections of the surface of the corpuscles are formed along the edges of the hexagonal cells.—*Comptes Rendus*, November 7, 1887, p. 875.